

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
28 July 2005 (28.07.2005)

PCT

(10) International Publication Number
WO 2005/068532 A1

(51) International Patent Classification⁷: **C08G 63/91**,
69/48, 64/42, 65/48, 65/331, 65/333, 81/00, 85/00

(74) Agent: **DORRESTIJN, Antoon**; DSM Intellectual Prop-
erty, P.O. Box 9, NL-6160 MA Geleen (NL).

(21) International Application Number:
PCT/EP2004/014886

(81) Designated States (*unless otherwise indicated, for every
kind of national protection available*): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(22) International Filing Date:
29 December 2004 (29.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
04075005.1 8 January 2004 (08.01.2004) EP

(84) Designated States (*unless otherwise indicated, for every
kind of regional protection available*): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

(71) Applicant (*for all designated States except US*): **DSM IP
ASSETS B.V.** [NL/NL]; Het Overloon 1, NL-6411 TE
Heerlen (NL).

(72) Inventors; and

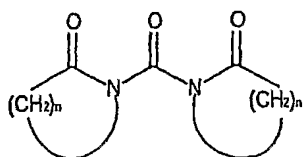
(75) Inventors/Applicants (*for US only*): **LOONTJENS,
Jacobus, Antonius** [NL/NL]; Synagogeplantsoen 76,
NL-6231 KK Meerssen (NL). **SCHOLTENS, Boudewijn,
Jan, Robert** [NL/NL]; Gelrestraat 12, NL-6151 JA Mun-
stergeleen (NL).

Published:

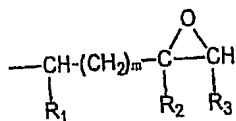
— with international search report

*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*

(54) Title: PROCESS FOR PREPARING A HIGH MOLECULAR POLYCONDENSATE



(I)



(II)

(57) Abstract: The invention relates to a process for preparing a high-molecular polycondensate, i.e. a polyester, a polyamide, a polyester-amide, a polycarbon-
ate, a polyether or a block copolymer by melt-mixing a polyester, a polyamide,
a polycarbonate, a polyether or a mixture of at least two of these said polycon-
densates with a carbonyl bislactam according to formula (I) in which formula
n is an integer of between 3 and 15, and a diepoxide. Preferably said diepox-
ide is a compound containing epoxy radicals of formula (II), which radicals are
linked direct to carbon, oxygen, nitrogen or sulfur atoms, wherein R₁ and R₃
are both hydrogen, R₂ is hydrogen or methyl, and m=0, or wherein R₁ and R₃,
taken together, are -CH₂-CH₂- or -CH₂-CH₂-CH₂-, in which case R₂ is hydro-
gen and m=0 or 1. The present invention results in a more stable process for the
production of a polycondensate with a high molecular mass. Furthermore the
polycondensate obtained with the process according to the invention has, even

under extreme process conditions such as high temperature, less discoloration. With the process according to the invention a per-
manent increase in the molecular weight of a polycondensate is obtained in an even faster way than with processes according to the
state of the art.

WO 2005/068532 A1